# Office of Environmental Laboratory Certification

South Carolina Department of Health and Environmental Control
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Web page: www.scdhec.net/labcert

# The *UPDATE*

June 2005

## What's New…

It's been a long time since we mailed out the *Update*. Most items listed in the *Update* are reminders, but a few things are new. Please feel free to call us if you have any questions.

We'd like to introduce a few new faces. Bennie Cockerel and Susan Butts are two new Laboratory Certification Officers. Both of them worked in the S.C. DHEC environmental laboratory before joining us. Bennie is working with toxicity labs as well as the inorganic and microbiology parameters. Susan is working with organics as well as in the inorganics and microbiology labs. Veronica Neff has joined us as our administrative support person. Most of the time, you'll talk to her when you call our Office. Please join us in welcoming these new team members.

## Proficiency Testing (PT) Studies….It's That Time Again

In order to maintain certification in South Carolina, acceptable PT sample results for the laboratory must be **received by Dec.31st each year** for the Water Supply (WS) and/or Water Pollution (WP) studies. To meet this deadline, the laboratory must participate in a study earlier than December. Please contact your PT Provider to determine which study results will be sent to our Office prior to Dec. 31st.

**It is critical that the laboratories have acceptable PT results submitted to this Office no later than Dec. 31st. Studies received in January will not be accepted for meeting the annual PT requirement. If acceptable PT Studies are not received by Dec. 31st, decertification may be initiated. The laboratory will be decertified upon receipt of the decertification letter.**

**Please ensure that your S.C. laboratory ID number and/or the Environmental Protection Agency (EPA) labcode is on the PT report and that the correct method number(s) for which the laboratory is certified is reported.**

**PLEASE NOTE:** We no longer send out annual reminders of the PT Studies. All certified labs are required to participate in annual studies as required by Regulation 61-81. Our Web site has information on the PT Studies, and you can call our Office if you have specific questions.

**Read On for DMR-QA Information (Page 2)**

## DMR-QA Study 25 - June 2, 2005 – Sept. 2, 2005

**The DMR-QA Study is mandatory for all major and selected minor permit holders under the Clean Water Act's National Pollutant Discharge Elimination System (NPDES). The DMR-QA Study evaluates the analytical and reporting ability of laboratories that routinely perform chemical and Whole Effluent Toxicity (WET) self-monitoring analyses required in NPDES permits that are reported by you in Discharge Monitoring Reports (DMR).**

For chemical tests under DMR-QA, you are responsible only for those chemical analytes that are both in your permit and in Study 25. Refer to Page 11 of your DMR-QA instructions for a list of analytes.

For the WET tests under DMR-QA, you are responsible only for the test organisms that are both in your permit and included in Study 25. You are required to participate even if the test conditions in your permit do not exactly match those in Study 25. If they do not match, refer to Page 13 of your DMR-QA WET testing instructions.

**Correction to the DMR-QA 25 Instructions**

There are two major corrections in the DMR-QA instructions sent to your facility.

1) The closing date is Sept. 2, 2005. The instructions listed Sept. 3.
2) The Internet address on Page 2 of the instructions is incorrect. The correct Internet address is: www.epa.gov/compliance/monitoring/programs/cwa/dmr/index.html.

*Facilities with Contract Laboratories*

Laboratories must order their Proficiency Testing (WP or DMR-QA) samples from a National Institute of Standards and Technology (NIST) accredited provider. Contact your contract laboratory and provide them with the **Analyte Checklist DMR-QA Study 25** on Page 9 of the instructions. Check off those analyses that must be performed by your contract lab, and include your facility name and NPDES permit number. The contract lab will then submit their study results (Water Pollution or DMR-QA) to you for reporting to the applicable provider.

**If your in-house lab is performing some of the analyses and the contract lab(s) is performing the other analyses, direct all of the labs to get their samples from the same NIST-accredited provider if possible.**

**Using a Water Pollution Study for the DMR-QA**

If you or your contract laboratories are using a Water Pollution (WP) study for generating results for the DMR-QA Study, the WP study must meet these requirements:

1) Study start date is after June 1, 2005 and data (i.e., final results) must not be released prior to June 2, 2005.
2) Study close date is on or before Sept. 2, 2005.
3) Study is offered by a NIST-Accredited Provider.

If you or your contract laboratory use a WP study, please remember that you and your contract laboratory must report all data to the provider by their published WP study close date, even if it is before the DMR-QA deadline of Sept. 2, 2005. Also notify the provider that the WP study is being used for the DMR-QA.

For facilities using PT providers different from their contract lab, ensure that results are submitted to our office documenting those analyses performed by the contract lab. The data must document the facility name, NPDES number, and U.S. EPA-assigned lab code for all laboratories reporting data.

**USEPA-assigned Lab Code**

Each laboratory must use the U.S. EPA-assigned lab code on all reported results. Each laboratory, performing analyses to meet the requirements of the DMR-QA, must document their U.S. EPA-assigned lab code for each analysis they perform and report. If you do not have a U.S. EPA-assigned lab code or do not remember your code call, fax, or write:

**Mr. Charles Feldman**
**U.S. EPA, M/S 140**
**26 W. Martin Luther King Drive**
**Cincinnati, Ohio 45268**
**(513) 569-7671: fax (513) 569-7191**

PT results reported without a U.S. EPA-assigned lab code may not be credited to the appropriate facility or laboratory.

**DMR-QA 25 Chemistry and WET Testing Instructions:**

1) Determine which analyses you and/or your contract lab(s) must perform. Complete the enclosed checklist on Page 9 for your lab and/or your contract lab(s). By submitting this checklist to the contract lab, the contract lab will know which analyses they must perform and report results to you and to the PT provider.

2) Order PT samples from a NIST-accredited provider to coincide with the DMR-QA study dates of June 2, 2005 to Sept. 2, 2005. **Note the start date and the close date for the study. Ensure that the study results are reported prior to the study close date designated by the PT provider.** Be aware that your contract lab(s) may be performing a different study with a different close date. If this is the case, ensure that the contract lab(s) report their data by their study close date.

3) RECORD your analytical data and U.S. EPA-assigned lab code on the data reporting form received with your samples from the PT Provider. **Be sure to follow the PT Provider's instructions and deadlines received with these samples.**

4) Also complete the NPDES Permittee Data Report Form (four-page form included in the DMR-QA study package or Provider-supplied cover sheets).

5) For each provider used by you and/or your contract lab, attach the NPDES Permittee Data Report Form to the data report form sent to the provider. These are your complete data packages that are sent to the applicable PT Provider. Maintain a copy for your records. **Be sure that the study results are reported prior to the PT Providers study close date.**

   Send a copy by mail or fax of the complete data packages to the address below by Sept. 2, 2005:

   Office of Environmental Laboratory Certification
   PO Box 72
   State Park, SC 29147
   Fax: 803-896-0850

6) By Oct. 28, 2005, all PT provider-graded test results required for each permit will be sent to the permittees and this Office.

7) By Dec. 8, 2005, submit a response to the Office of Environmental Laboratory Certification to include the following documentation:

- An S.C. DHEC DMR form with the facility name, permit number, contact person, South Carolina laboratory ID number of each laboratory performing the regulatory analyses for each parameter documented on the form. This will ensure our office that a certified laboratory is performing your required regulatory analyses as documented on your NPDES permit and that the requirements of the DMR-QA study have been met for all laboratories performing these analyses.
- Corrective actions taken by your laboratory and/or your contract laboratory for "not acceptable" data reported by the PT Providers. You or your contract laboratory must identify and report the causes and your system changes to correct the discrepancies and to avoid their reoccurrence.

If you have any questions concerning the DMR-QA Study 25, please contact Carol Smith at 803-896-0992 or Susan Butts at 803-896-0978.

## Monthly Discharge Monitoring Report (DMR) Reporting…

Whenever you report data to the Department on your monthly DMR forms, you must include the five-digit S.C. Laboratory Certification number. The Laboratory ID Number reported for each analyte must reflect the number of the laboratory that actually performed the analysis for that analyte. If the laboratory that you use contracts out some of the analyses, you must use the S.C. Laboratory ID number of the contract laboratory. Your laboratory must provide you with all contract laboratory ID numbers used in completing your sample analyses.

For example:

You contract your aluminum, oil & grease, and phenolics to Lab ID 12345.
Lab ID 12345 contracts aluminum to commercial lab ID 23456.

Lab ID 23456 analyzes aluminum.
Lab ID 12345 analyzes oil & grease and phenolics.

On your DMR form:
You report lab ID 12345 by the analytes oil & grease and phenolics,
You report lab ID 23456 by the analyte aluminum.

## Residual Chlorine…

To meet certification requirements for residual chlorine, a calibration check including five standards and a blank must be analyzed with each new lot of DPD reagent or once a year, whichever is sooner. The laboratory is not required to draw the curve and perform meter reading corrections based on the curve as long as: all five standards analyzed with the annual calibration check are within 10 percent of the true value **and** the daily calibration check standards (a blank plus two standards) are within 10 percent of the true value. Even if all standards are within 10 percent, the calibration check (using five standards) must be performed with each new lot of DPD reagent or each year, whichever is sooner. Daily standards are always required when analyzing compliance samples.

All labs are reminded that gel standards or other secondary standards are not approved for compliance monitoring. This means that on days when you are analyzing compliance samples, you must check your meter using standards prepared from the same material as your calibration standards.

Many labs are purchasing commercially-prepared potassium permanganate stock standard. This is acceptable; however, the standard material must be replaced six months after opening unless this exceeds the manufacturer's expiration date. If the manufacturer's expiration date is before the six-month date, the standard must be discarded by the manufacturer's expiration date.

## Turbidity…

When analyzing drinking water turbidity samples for compliance, the laboratory meter must be checked with a 0.5NTU turbidity standard. These standards are commercially available. This standard must be within 10 percent of the true value.

## Biochemical Oxygen Demand (BOD)…

All BOD samples (except blanks), including the seed and Glucose Glutamic Acid (GGA) samples must deplete at least 2mg/L oxygen and have at least 1mg/L oxygen remaining. This is known as the 2:1 rule. The acceptance limits for the seed correction factor are 0.6 to 1mg/L and the GGA for BOD is 198+/- 30.5mg/L. The blank must not deplete more than 0.2mg/L. Occasionally, the blank may deplete up to 0.5mg/L.

## Carbonaceous BOD (CBOD)…

The 20th edition of Standard Methods lists the acceptance range for CBOD as the same as regular BOD. The EPA is reviewing this. For now, these limits are not to be used. The CBOD value is 164 +/- 30.7. **Please note that you must be certified to report CBOD. This is not covered under your BOD certification.** We offer certification for CBOD separately, and there is a separate PT sample required for BOD and CBOD. You must also include a set of Quality Control (QC) samples for CBOD that include the nitrification inhibitor. Seed material containing the nitrification inhibitor is not approved for use at this time. Standard Methods addresses the proper reagents and procedures for adding nitrification inhibitor. Please contact our Office if you have questions regarding CBOD certification.

## Trace Metals…

Office staff are updating guidance information on trace metals analysis. The revision will detail QC requirements and other certification issues. We will place this on our Web site as soon as it is available. We anticipate it being available by July.

## Biosolids…

There are many treatment options available for biosolids, which may affect certifications needed. The facility must determine which methods are applicable based upon: method of disposal, biosolid class and alternative, etc. Some certifications required for biosolid analyses include::

1) Biosolids sample preparation, EPA/625/R-92/013 Appendix F. This appendix also includes how to perform biosolid calculations.

2) Fecal Coliform Analysis using the appropriate technique:

   A) SM 9221 E - Fecal Coliform Most Probable Number (MPN) procedure
   B) SM 9222 D - Fecal Coliform Membrane Filter (MF) procedure

   NOTE: For class A, alternative 1, only SM 9221 E is approved for fecal coliform analysis. Both fecal coliform procedures are currently approved for class B, alternative 1, but the MPN procedure is strongly recommended due to interferences with the filter procedure. The EPA plans to propose a new biosolids procedure that eliminates the MF option.

3) Total solids, SM 2540 G. Total, fixed, and volatile solids in solid and semisolid samples. Required for class A and class B.

4) Other inorganic parameters (metals, nitrogen, pH, etc.) See Table 4-6 Analytical Methods in the EPA's Part 503 Implementation Guidance, October 1995 document number EPA 833-R-95-001.

## A-1 Medium for Enumerating Fecal Coliforms in Ambient Water and Waste Water

A-1 medium prepared in screw-capped tubes may be held up to three months from the date of preparation (or manufacture for commercially prepared medium) at $4^{o}C$.

## Signature Page…

The analyst must initial all analysis records. In reviewing the records, it is sometimes difficult to determine the analyst whose initials appear on the records. To assist with the review, not only by outside data reviewers but also internal reviews, this Office is implementing the policy that each laboratory maintain a signature page. The EPA, when performing laboratory evaluations, has implemented this procedure. A signature page must include the date, the analyst's printed name, the analyst's signature, the analyst's initials printed, and the analyst's initials signed as they are used on analysis records. Please implement this in your laboratory so that when your laboratory is evaluated, it will be available.

## When is a Separate Lab ID Number Needed?

When multiple operators/facilities are reporting under a single laboratory certification I.D. number, the following procedures must be followed:

The laboratory must designate one person as the quality assurance (QA) officer or the laboratory director. This person must assume the responsibility of ensuring the following criteria are being met:

a) The QA Officer/Laboratory Director must be given the responsibility by the laboratory's governing body (owners, directors, commissioners, councilmen, mayor, board members, or other proprietor) of supervising the operations of all the operators/facilities and ensuring the quality of data reported on a daily basis.

b) All operators have been adequately trained to calibrate and use all pertinent instruments.

c) All operators report for work each day at a central location (the physical location to which the laboratory ID number is assigned) to calibrate their equipment before going to their specific facility. All equipment, buffers, records, etc must be stored at the central location.

d) **"Acceptable"** results are obtained for a proficiency testing (PT) sample obtained from an approved PT provider each year for each certified parameter.

*On-Site Evaluations*

When multiple operators/facilities of the same corporate body prefer to report under one identification (I.D.) number, the on-site evaluation process initiated by this Office will be to conduct the on-site for all entities associated with the ID number at a pre-arranged location (preferably centrally located) and time. All equipment, analysis records, and quality control records for each operator/facility must be brought to the pre-arranged location for review. Each facility must be represented at the evaluation.

If an entity with multiple operators/facilities chooses not to or is unable to comply with items 1a-d above, then separate on-site evaluations will be performed for each operator/facility under the corporate umbrella and separate I.D. numbers will be assigned.

The following criteria must be met if separate ID numbers are assigned:

a) A completed application with the $125 application fee must be submitted for each facility.

b) Annually, a proficiency testing (PT) sample must be analyzed by each operator/facility for each certified parameter. **"Acceptable"** results must be achieved.

c) Each facility will be considered a unique laboratory and will be given a separate ID number.

*Invoicing/Billing Information*

Annually, each operator/facility issued a unique ID number will receive a separate invoice.

## Discrete Analyzers

There are several manufacturers of discrete analyzers. These instruments may be equivalent to currently approved EPA methods, but this must be documented by the manufacturer and reviewed by the Office of Environmental Laboratory Certification (referred to as "Office"). Currently, this Office is reviewing methods for Konelabs. Some information regarding the SEAL discrete analyzer and the Westco SmartChem has been received from the EPA.

**Please note that some discrete analyzers are not acceptable for analyzing compliance samples until this Office has received and reviewed the data for each instrument and method requested.** If you have any questions about discrete analyzers or their use in the lab, please contact this Office at (803) 896-0970.

## How Do I Know What is Approved for Use?

With constant scientific advancement in the laboratory, it is often confusing when determining what is and is not approved for use when monitoring compliance samples. Methods are approved for use in the applicable Federal Register, which becomes part of the Code of Federal Regulations. The Congress of the United States passes these regulations that become part of the Clean Water Act, the Safe Drinking Water Act, etc. For drinking water, the approved methods are located in 40 CFR Parts 141 and 142. For wastewater and NPDES permits, the approved methods are located in 40 CFR Part 136. There are many other regulations such as the Disinfection By-Products Rule, the 503 regulations for sludge samples, used oil regulations, etc. that have additional information in them. The S.C. DHEC project manager for each specific site and/or permit can be consulted to determine the specific project needs. You may also contact our office with questions regarding general methods. We tailor our application to include only the approved methodology. If you wish to use a method that does not appear on the application, please contact S.C. DHEC to determine whether or not that method may be used.

## New Methods…

A Federal Register dated Oct. 23, 2002 approved several methods under the Safe Drinking Water Act and the Clean Water Act. On April 6, 2004, a proposed Federal Register was sent out. The comment period has ended, and the comments are being reviewed. We anticipate this rule being finalized sometime this year. Some 4-methylum-belliferyl-β-D-glucuronide (MUG) methods have been proposed to enumerate E. Coli in ambient water. This appears under the Clean Water Act. Please note that this does not approve the methods for use on wastewater or potable water samples. There are currently no EPA promulgated methods for enumerating E. Coli in wastewater, drinking water, or ambient water at this time.

## What is a Certification Period?

Certification is offered to laboratories up to a three-year period. In-state laboratories receive a certificate with an expiration date. This date may be up to three years depending on the results of the on-

site evaluation. Out-of-state laboratories are assigned expiration dates based on their State Certifying Authority. Although a laboratory may be granted certification for up to three years, there are annual requirements that must be met in order to maintain this certification. The annual requirements include: maintaining all required QC, paying annual fees, and successfully participating in the required annual PT Studies. Failure to maintain certification requirements, including paying fees and meeting PT requirements, can results in decertification of the laboratory even if the certificate was issued for a longer period of time.

## Manual for the Certification of Laboratories Analyzing Drinking Water Samples…

This Office has used the "Manual for the Certification of Laboratories Analyzing Drinking Water Samples" for a number of years. This manual outlines guidance in certifying laboratories analyzing drinking water samples. The Office has used this to assist in the development and implementation of certification criteria, particularly the microbiology. The manual was updated in January 2005 and we are now in the process of implementing the new January 2005 fifth edition of the manual. You can download a copy of this manual at www.epa.gov/safewater/labcert/labindex.html. If you wish to order the manual, the EPA publication number is EPA815-R-05-004.

## WEA Laboratory Workshop – Aug.18, 2005

The Water Environment Association (WEA) Laboratory Workshop entitled "Drinking Water and Wastewater Biological Updates" will be held Aug.18, 2005 at the Columbiana Hotel and Conference Center (formerly the Sheraton Hotel located off of I-20 at Bush River Road). To register for the conference, please contact the WEA at (803) 540-1888 or visit their website at www.weasc.org.

## The *Update*…

The *Update* can be downloaded from the Internet at www.scdhec.net/labcert. Select "Past and Current Issues of the *Update*". Due to resource limitations in the Office, only one publication per certified laboratory can be mailed. If there are other people in your organization who would benefit from receiving this publication, they can download a copy from the Web site.

| How to Contact Us… | | |
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